Prototype Plan

Purpose

- We are going to outline the timeline of what we expect to do in each prototype we end up making for the Airlift/ HMS project

Proof of Concept Prototype

- Alpha

Goals

- Show that the motor changes speed depending on the distance that is received by the microcontroller.

Type

- This is a proof of concept prototype

Scope

- The electronics included will be the microcontroller, motor, ESC, battery, and distance sensor

Timeline

- By October 21, 2025

Looks-Like Prototype

- Beta

Goals

- Show how the chassis for the drone and the frame would most likely end up looking like

Type

- This is a looks-like prototype

Scope

- Mainly 3-D printed design

Timeline

- Sometime in mid November

Works-Like Prototype

- Charlie

Goals

- Show that the motor works correctly with the distance that is being read. The hovering speed should happen at a specific distance and then should increase or decrease depending on the distance change. This would be done on a makeshift frame, not in the actual chassis or frame.

Type

- This is a works-like prototype

Scope

- The electronics included will be the microcontroller, motor, ESC, battery, distance sensor, and button

Timeline

- Sometime in the end of November to beginnings of December

Engineering Prototype

- Delta

Goals

- Show that the chassis can hold all the electronics and that the drone can hover and get back to hovering at the original distance. The chassis and frame work well with each other. The software has little issues.

Type

- This is an engineering prototype

Scope

- The electronics included will be the microcontroller, motor, ESC, battery, distance sensor, LEDs, button, chassis of the drone, and frame of the drone

Timeline

- Mid to end of December